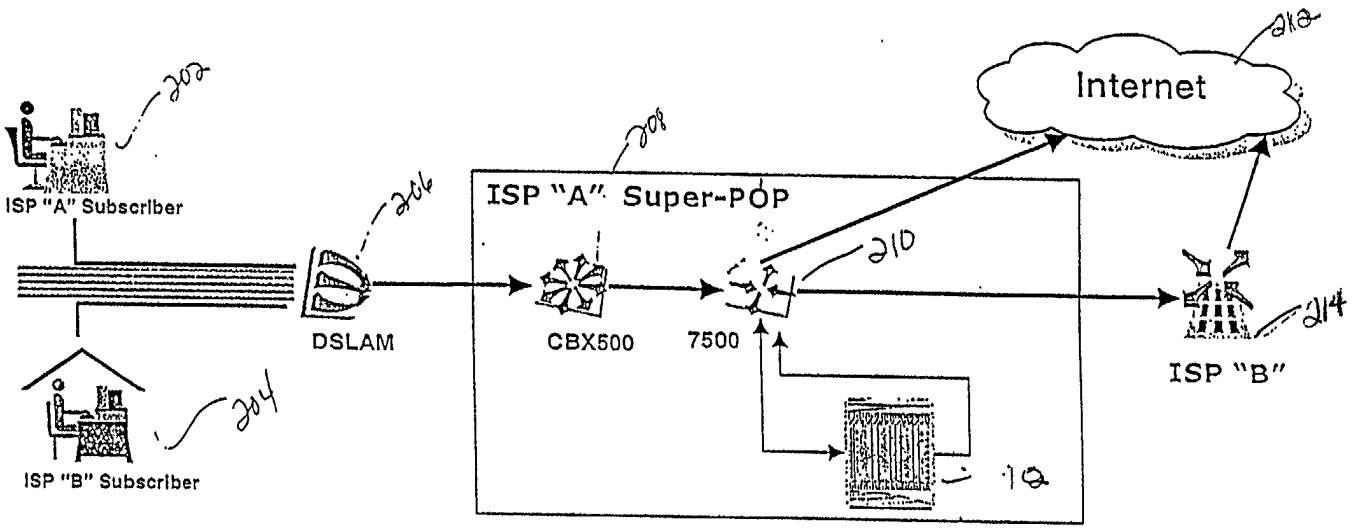
Internet
ISP "A" Subscriber
ISP "A" Super-POP
DSLAM
CBX500
7500
ISP "B"
ISP "B" Subscriber

Fig. 1

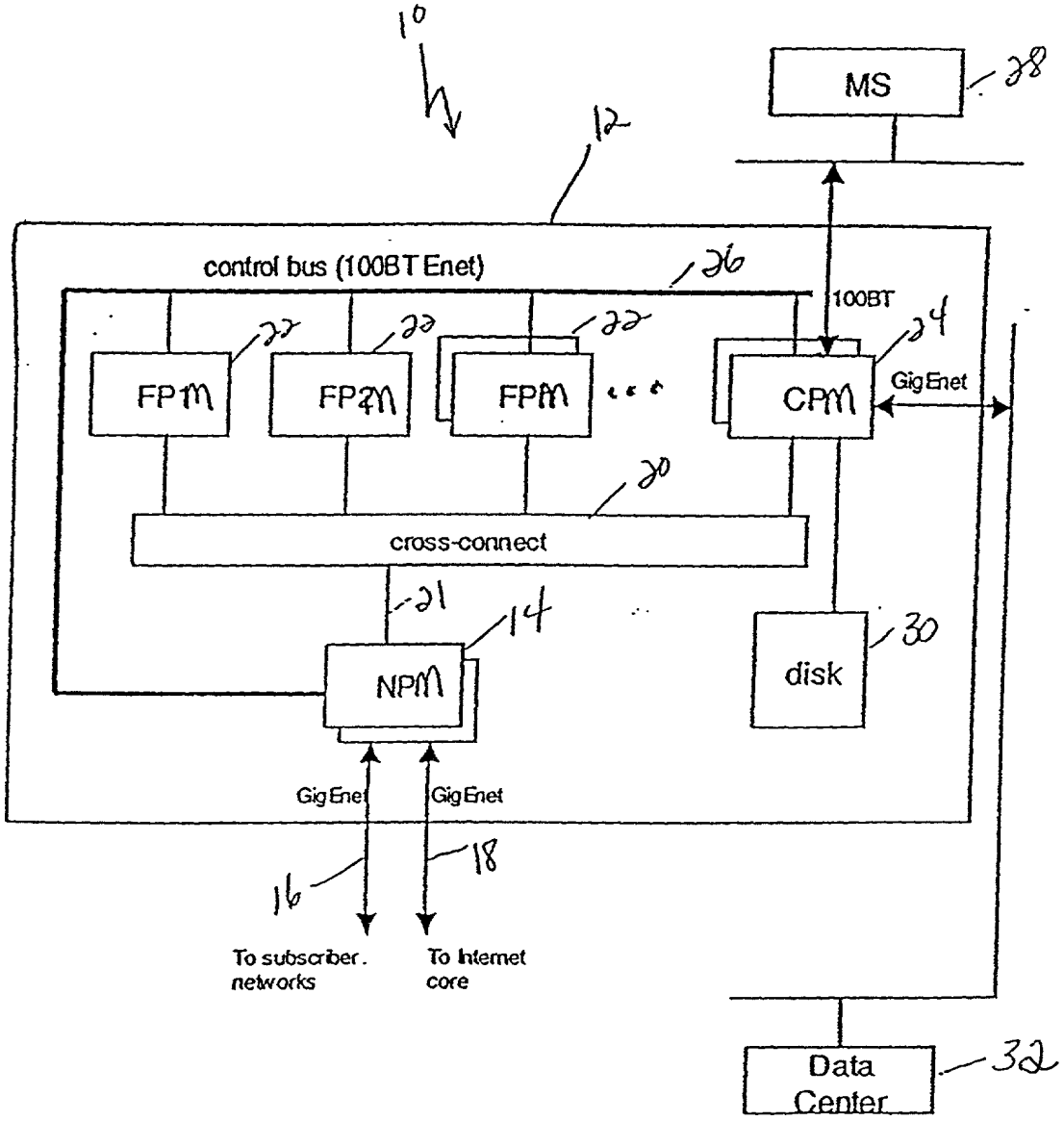
10
12
MS
28
control bus (100BT Enet)
26
100BT
22
22
22
24
FPM
FPM
FPM
CPM
GigEnet
20
cross-connect
21
14
NPM
disk
30
GigEnet
GigEnet
16
18
To subscriber networks
To Internet core
Data Center
32

Fig. 2

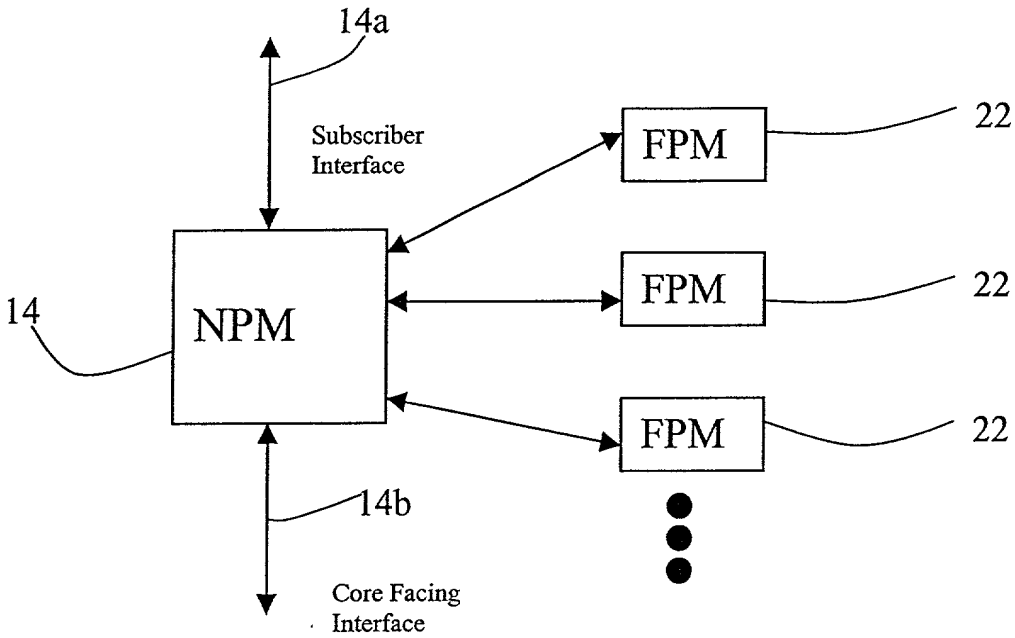
14a
Subscriber
Interface
FPM
22
FPM
22
14
NPM
FPM
22
14b
Core Facing
Interface

Fig. 3A

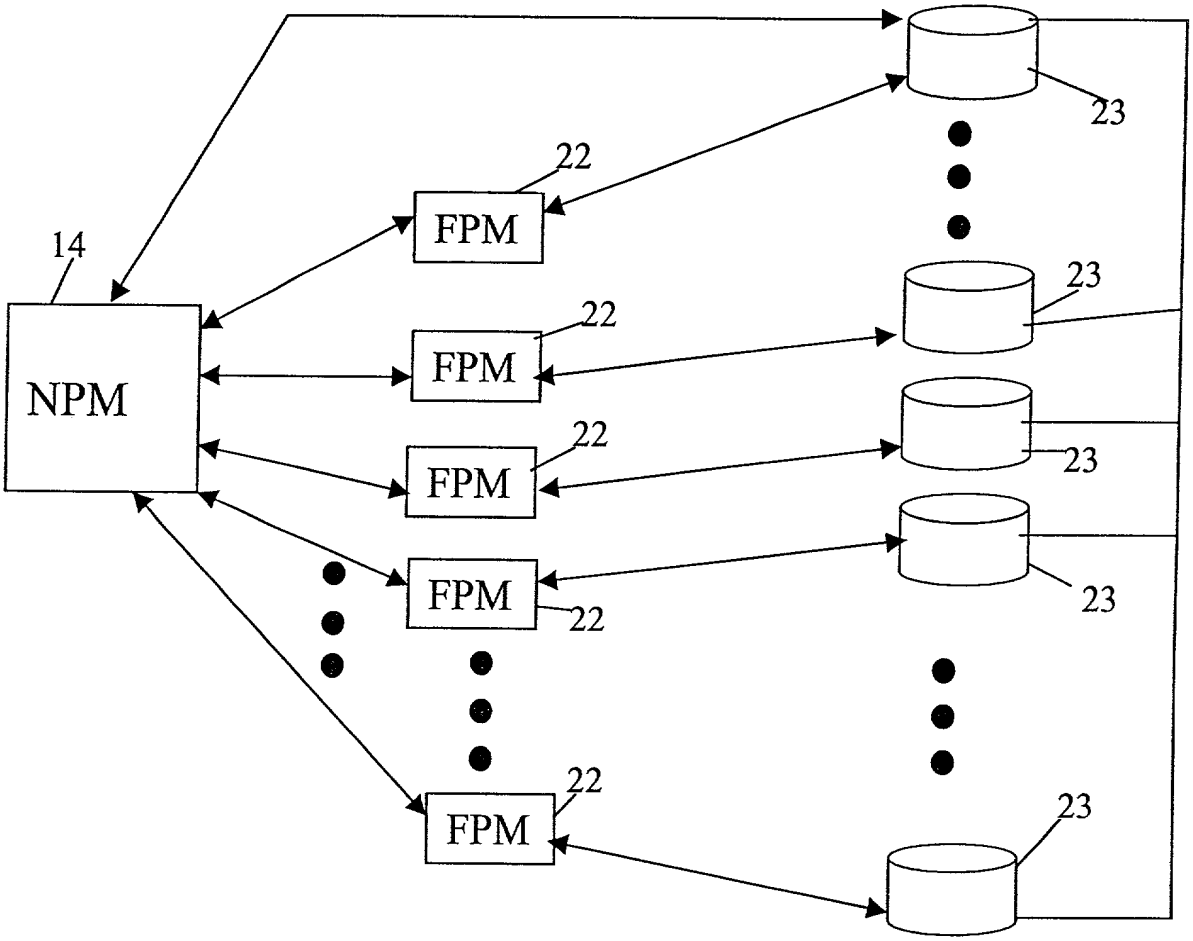

Fig. 3B

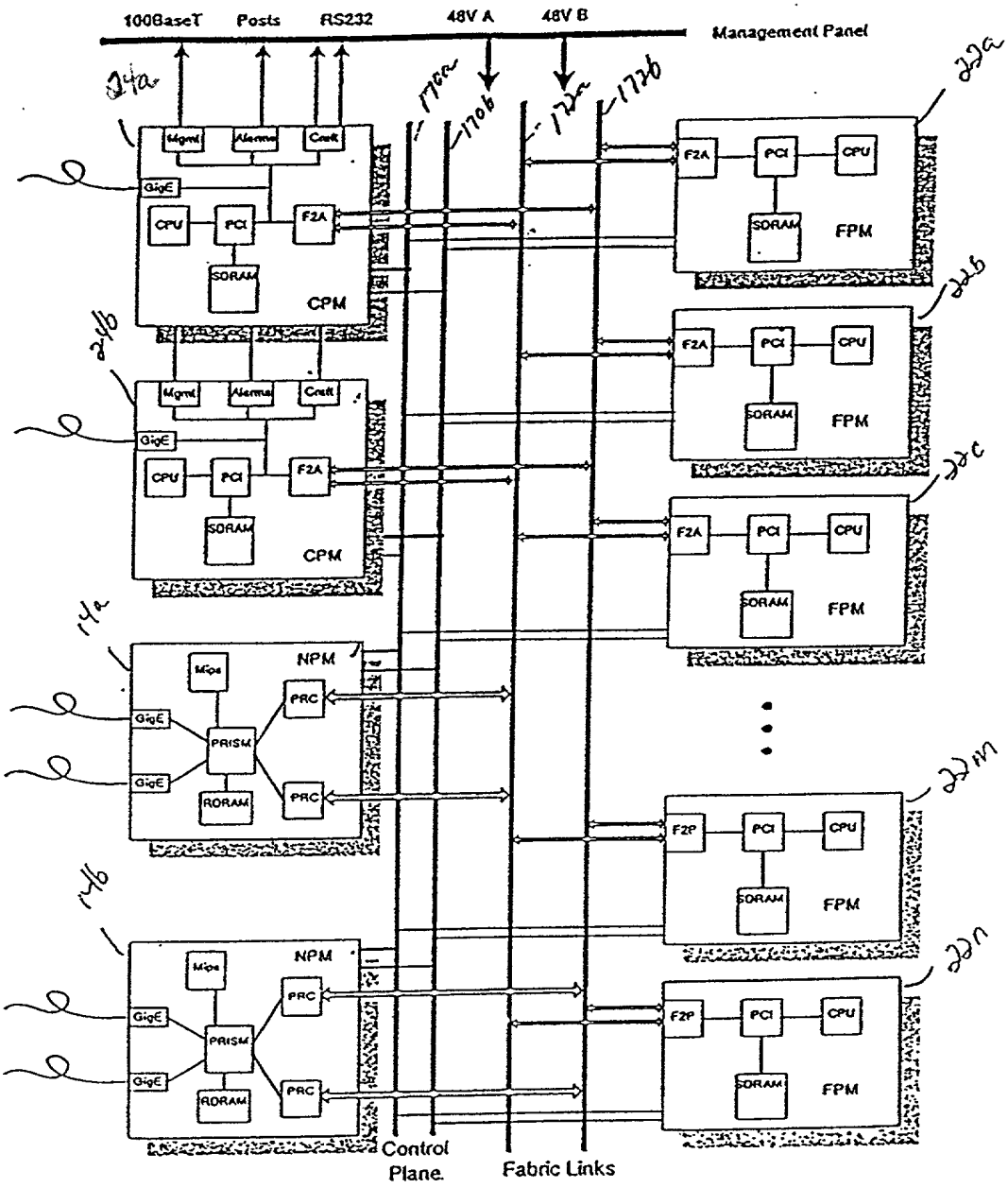
100BaseT
Posts
RS232
48V A
48V B
Management Panel
CPM
NPM
FPM
GigE
CPU
PCI
F2A
F2P
SDRAM
RDRAM
PRC
PRISM
Control Plane
Fabric Links

Fig. 4

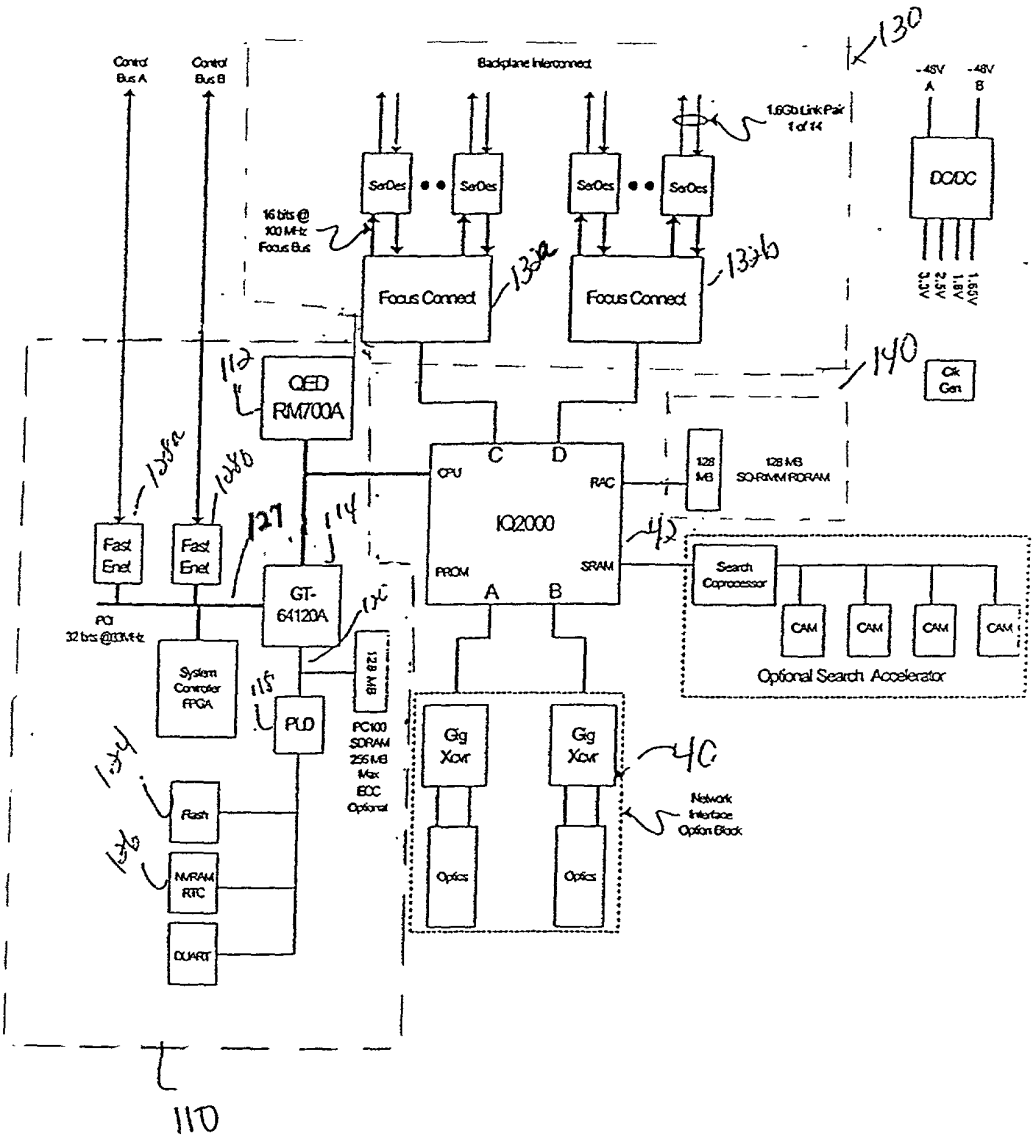
Control Bus A
Control Bus B
Backplane Interconnect
130
-48V A
-48V B
1.6Gb Link Pair 1 of 14
SerDes
SerDes
SerDes
SerDes
DCDC
3.3V
2.5V
1.8V
1.5V
16 bits @ 100 MHz Focus Bus
Focus Connect
132a
Focus Connect
132b
140
Clk Gen
112
QED RM7000A
C
D
CPU
RAC
128 MB
128 MB SO-RIMM RDRAM
IQ2000
PROM
SRAM
A
B
142
Search Coprocessor
CAM
CAM
CAM
CAM
Optional Search Accelerator
Fast Enet
Fast Enet
127
114
GT-64120A
PCI 32 bits @33MHz
System Controller FPGA
115
PLD
128 MB
PC100 SDRAM 256 MB Max ECC Optional
Gig Xcvr
Gig Xcvr
40
Network Interface Option Block
Optics
Optics
Flash
NVRAM RTC
DUART
110

Fig. 5

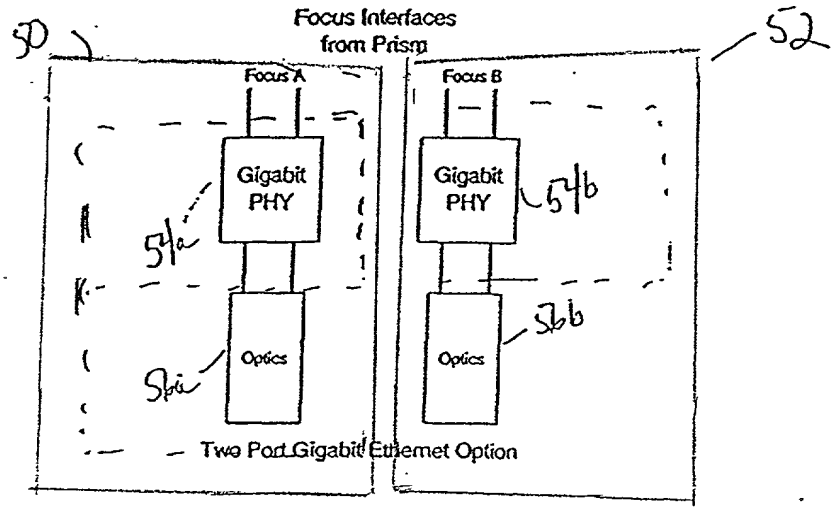
50
Focus Interfaces
from Prism
52
Focus A
Focus B
Gigabit
PHY
Gigabit
PHY
54a
54b
Optics
Optics
56a
56b
Two Port Gigabit Ethernet Option

Fig. 6A

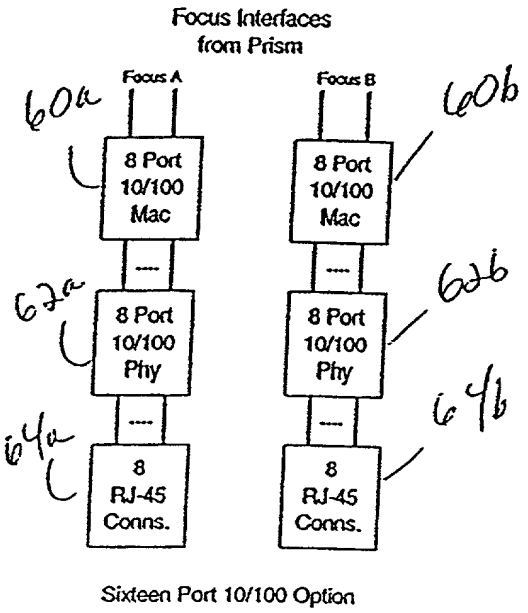
Focus Interfaces
from Prism
Focus A
Focus B
60a
60b
8 Port
10/100
Mac
8 Port
10/100
Mac
62a
62b
8 Port
10/100
Phy
8 Port
10/100
Phy
64a
64b
8
RJ-45
Conns.
8
RJ-45
Conns.
Sixteen Port 10/100 Option

Fig. 6B

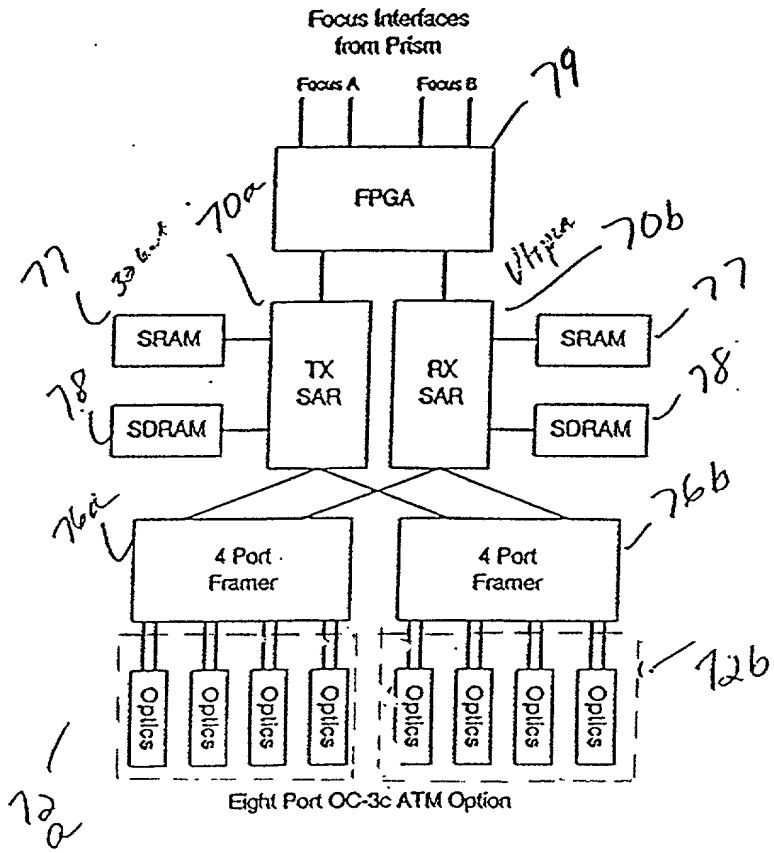
Focus Interfaces
from Prism
Focus A
Focus B
79
FPGA
70a
70b
77
SRAM
TX
SAR
RX
SAR
SRAM
77
78
SDRAM
SDRAM
78
76a
76b
4 Port
Framer
4 Port
Framer
Optics
Optics
Optics
Optics
Optics
Optics
Optics
Optics
72b
72a
Eight Port OC-3c ATM Option

Fig. 6C

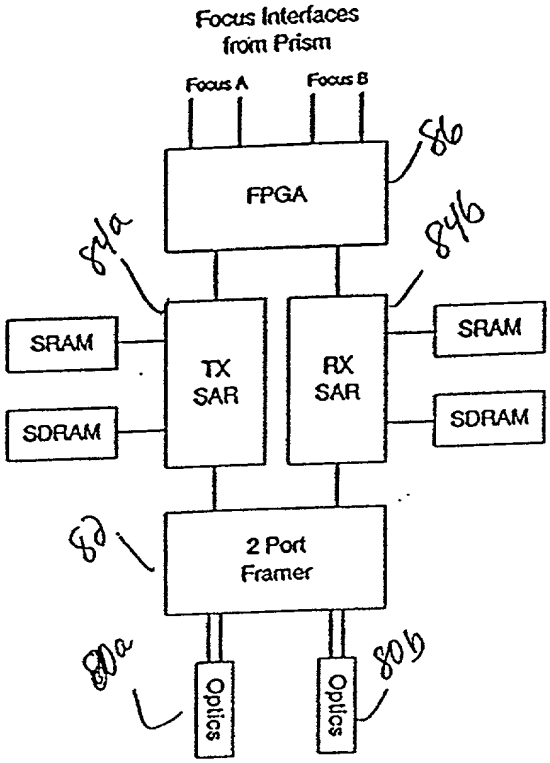
Focus Interfaces
from Prism
Focus A
Focus B
86
FPGA
84a
84b
SRAM
SDRAM
TX
SAR
RX
SAR
SRAM
SDRAM
82
2 Port
Framer
80a
80b
Optics
Optics

Fig. 6D

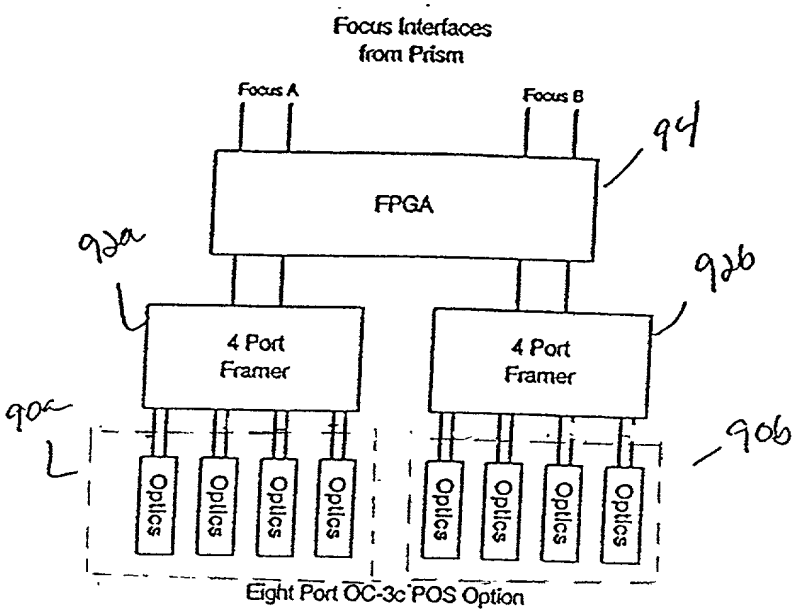
Focus Interfaces
from Prism
Focus A
Focus B
94
FPGA
92a
92b
4 Port
Framer
4 Port
Framer
90a
90b
Optics
Optics
Optics
Optics
Optics
Optics
Optics
Optics
Eight Port OC-3c POS Option

Fig. 6E

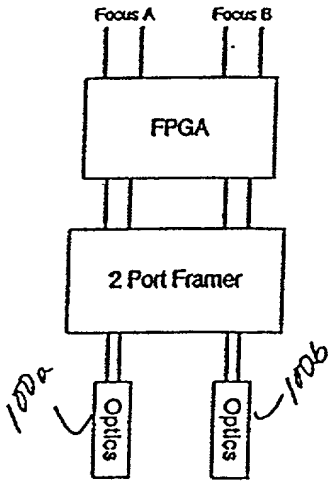

Fig. 6F

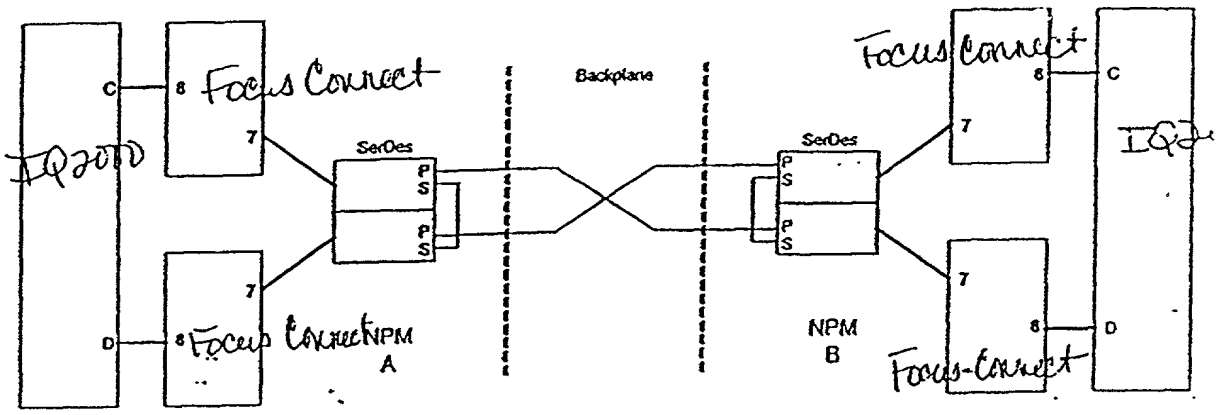

Fig. 7

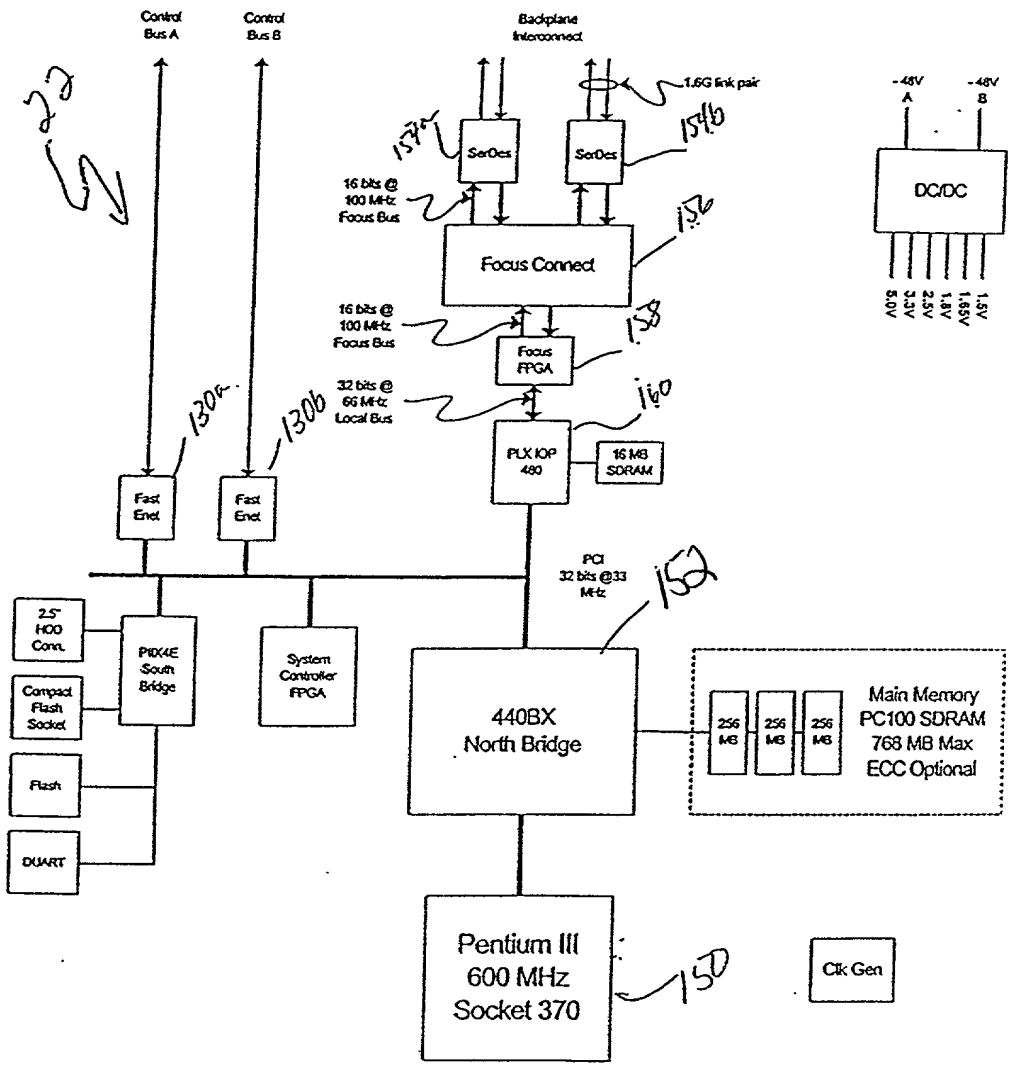
Control Bus A
Control Bus B
Backplane Interconnect
1.6G link pair
-48V A
-48V B
SerDes
SerDes
DC/DC
16 bits @ 100 MHz Focus Bus
Focus Connect
5.0V
3.3V
2.5V
1.8V
1.65V
1.5V
16 bits @ 100 MHz Focus Bus
Focus FPGA
32 bits @ 66 MHz Local Bus
PLX IOP 480
16 MB SDRAM
Fast Enet
Fast Enet
PCI 32 bits @33 MHz
2.5" HDD Conn.
Compact Flash Socket
Flash
DUART
PIIX4E South Bridge
System Controller FPGA
440BX North Bridge
256 MB
256 MB
256 MB
Main Memory PC100 SDRAM 768 MB Max ECC Optional
Pentium III 600 MHz Socket 370
Clk Gen

Fig. 8

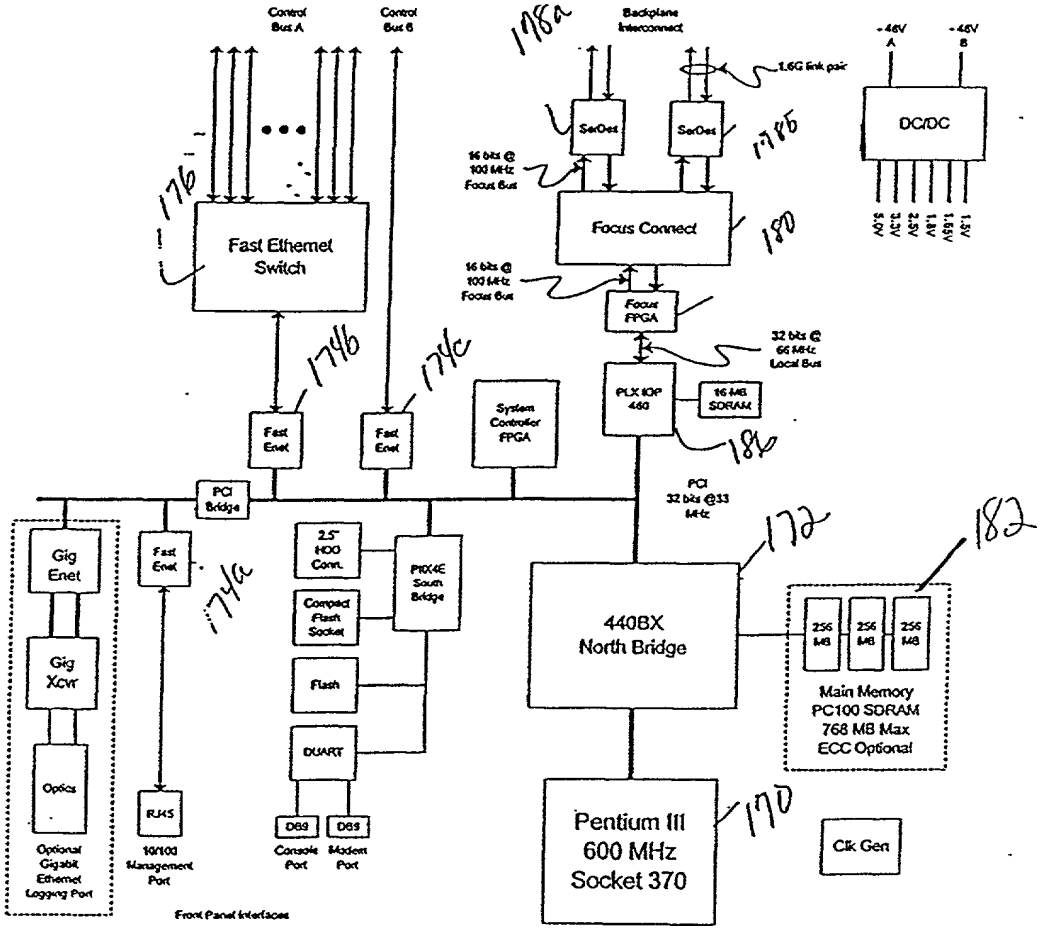
Control Bus A
Control Bus B
Backplane Interconnect
1.6G link pair
-48V A
-48V B
SerDes
SerDes
DC/DC
5.0V
3.3V
2.5V
1.8V
1.55V
1.5V
16 bits @ 100 MHz Focus Bus
Fast Ethernet Switch
Focus Connect
Focus FPGA
16 bits @ 100 MHz Focus Bus
32 bits @ 66 MHz Local Bus
PLX IOP 460
16 MB SDRAM
System Controller FPGA
Fast Enet
Fast Enet
PCI Bridge
PCI 32 bits @33 MHz
Gig Enet
Gig Xcvr
Optics
Optional Gigabit Ethernet Logging Port
Fast Enet
RJ45
10/100 Management Port
2.5" HDD Cont.
Compact Flash Socket
Flash
DUART
PIIX4E South Bridge
DB9
DB9
Console Port
Modem Port
Front Panel Interfaces
440BX North Bridge
256 MB
256 MB
256 MB
Main Memory PC100 SDRAM 768 MB Max ECC Optional
Pentium III 600 MHz Socket 370
Clk Gen
176
178a
178b
180
174b
174c
174a
172
182
170

Fig. 9

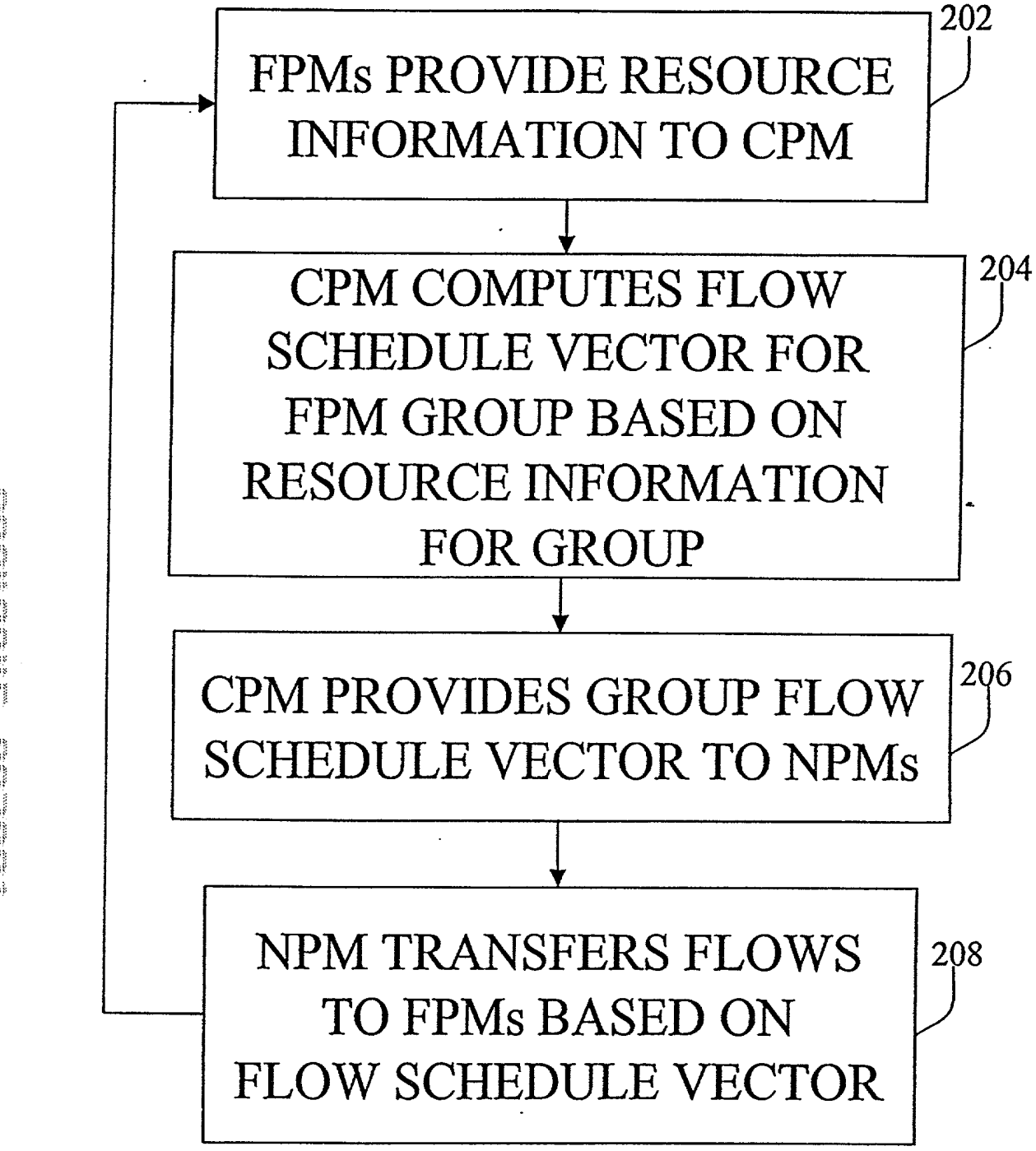
FPMs PROVIDE RESOURCE INFORMATION TO CPM
202
CPM COMPUTES FLOW SCHEDULE VECTOR FOR FPM GROUP BASED ON RESOURCE INFORMATION FOR GROUP
204
CPM PROVIDES GROUP FLOW SCHEDULE VECTOR TO NPMs
206
NPM TRANSFERS FLOWS TO FPMs BASED ON FLOW SCHEDULE VECTOR
208
200

Fig. 10